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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,057	03/30/2004	Robert M. Reinschmidt	16820P281	7985

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER	
TAN, VIBOL	

ART UNIT	PAPER NUMBER
2819	

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/815,057	REINSCHMIDT, ROBERT M.	
	Examiner	Art Unit	
	Vibol Tan	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-14,16-18 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4,7,10,12-14,17,18 and 20* is/are rejected.

7)☒ Claim(s) *5,6,8,9,11 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 4, 7, 10, 12-14, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Bryan et al. (U.S. 6,552,582) in view of Tinsley et al. (US 2003/0085736).

In claim 4, Bryan et al. teaches all claimed features in Fig. 2 an apparatus comprising: a plurality of source followers (206, 208), each of the plurality of source followers comprising a pull-down transistor having a source (not labeled), a drain (not labeled), a gate (not labeled), and a bulk terminal (connected to the source terminal as shown); and a plurality of pull-up transistors (202, 204), each of the plurality of pull-up transistors having a source (not labeled), a drain (not labeled), and a gate (not labeled), wherein the drain of each of the plurality of pull-up transistors is coupled to the source of a pull-down transistor of the plurality of source followers (at nodes 224 and 226, respectively), to output a plurality of differential signals (224 and 226) via the drains of the plurality of pull-up transistors; with the exception of teaching a first current source coupled to the sources of the plurality of pull-up transistors; an operational amplifier, coupled to the first current source, to drive the first current source; and a feedback path coupled between the drains of the plurality of pull-up transistors and an input of the operational amplifier. However, Tinsley et al. teaches in Fig. 5, a first current source (I1) coupled to the sources of the plurality of pull-up transistors (M1, M3); an operational amplifier (265), coupled to the first current source,

to drive the first current source; and a feedback path (270) coupled between the drains (via R1 and R2) of the plurality of pull-up transistors and an input of the operational amplifier (negative terminal for 265).

Therefore; it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teachings of Bryan et al. with the teachings of Tinsley et al. in order to provide a LVDS driver circuit having means to adjust the current to adjust the common mode of the output up or down.

In claim 7, Bryan et al. teaches all claimed features in Fig. 2 an apparatus comprising: a plurality of source followers (206, 208), each of the plurality of source followers comprising a pull-down transistor having a source (not labeled), a drain (not labeled), a gate (not labeled), and a bulk terminal (connected to the source terminal as shown); and a plurality of pull-up transistors (202, 204), each of the plurality of pull-up transistors having a source (not labeled), a drain (not labeled), and a gate (not labeled), wherein the drain of each of the plurality of pull-up transistors is coupled to the source of a pull-down transistor of the plurality of source followers (at nodes 224 and 226, respectively), to output a plurality of differential signals (224 and 226) via the drains of the plurality of pull-up transistors; with the exception of teaching a low swing differential pre-driver, coupled to the gates of the pull-down transistors of the plurality of source followers, to drive the pull-down transistors. However, Tinsley et al. teaches in Fig. 4, a low swing differential pre-driver (220), coupled to the gates (IN_1, IN_2) of the pull-down transistors (M2, M4) of the plurality of source followers, to drive the pull-down transistors.

Therefore; it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teachings of Bryan et al. with the teachings of Tinsley et al.

in order to amplify, or may convert to appropriate bias levels before the signals are fed into a LVDS driver circuit.

In claim 10, Tinsley et al. further teaches the apparatus of claim 7, further comprising: a network interface [0003, line 8; networking] including the plurality of pull-up transistors (M1, M3) and the plurality of source followers (M2, M4); and a plurality of transmission lines (not shown) coupled to the network interface, the plurality of transmission lines being driven by the plurality of low voltage differential signals.

Claim 12 corresponds to detailed circuitry already discussed similarly with regard to claim 7.

Claim 13, Bryan et al. further teaches the method of claim 12 further comprising reducing body effect on the plurality of pull-down transistors (bulk terminal coupled to source terminal for each transistor).

Claim 14 corresponds to detailed circuitry already discussed similarly with regard to claim 4.

Claim 17 corresponds to detailed circuitry already discussed similarly with regard to claim 4.

Claims 18 and 20 correspond to detailed circuitry already discussed similarly with regard to claim 4.

3. Claims 5, 6, 8, 9, 11 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. In light of further consideration, the new ground(s) of rejection have been set forth, as discussed above.

Claims 4, 7, 10, 12-14, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Bryan et al. in view of Tinsley et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vibol Tan whose telephone number is (571) 272-1811. The examiner can normally be reached on Monday-Friday (7:00 AM-4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VIBOL TAN
PRIMARY EXAMINER